

# ABSTRACT OF THE DISCLOSURE

In a method of measuring a radial gradient index distribution of a rod lens by calculating higher-order index distribution coefficients indicating the gradient index distribution, (1)

5 the rod lens is processed so that the optic-axial length of the rod lens is approximately equal to  $P/2$  (in which  $P$  represents a paraxial period length (pitch)) or approximately equal to an integer multiple of  $P/2$  and so that opposite end surfaces of the rod lens are shaped like parallel planes, (2) a patterned surface is set as an object surface in the proximity of one end surface of the rod lens, and an image surface is formed in the proximity of the other end surface of the rod lens by irradiating the patterned surface with condensed monochromatic light, (3) the positions of paraxial focal points and the curves of curvature of field are obtained by observing the image surface, and

(4) higher-order index distribution coefficients are calculated back by a fitting process on the basis of the positions of paraxial focal points and the curves of curvature of field. (Fig. 4)